

Application No. 10/598,866  
Amdt. Dated: March 11, 2009  
Reply to Office Action Dated: December 18, 2008

Amendments to the Specification

Please replace paragraph 3 on page 2 with the following amended paragraph:

According to an exemplary embodiment of the present invention ~~as set forth in claim 1~~, the above object may be solved by a method of processing a projection data set of an object of interest, wherein the projection data is acquired by means of a source of electro-magnetic radiation generating a beam and by means of a radiation detector detecting the beam. According to this exemplary embodiment of the present invention, the projection data set is rebinned from a first geometry to a second geometry, resulting in a first rebinned projection data set, wherein a second radial resolution of the first rebinned projection data set in the second geometry is higher than a first radial resolution of the projection data set in the first geometry.

Please replace paragraph 5 on page 2 with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 2~~, the projection data set in the first geometry comprises a first focus data set and a second focus data set, wherein the first focus data set is acquired at a first position relative to the detector of a focal spot of the electro-magnetic radiation emitted from the source and wherein the second focus data set is acquired at a second position of a focal spot relative to the detector of the electro-magnetic radiation emitted from the source.

Please replace paragraph 2 on page 3 with the following amended paragraph:

Another exemplary embodiment of the present invention ~~is set forth in claim 3~~, which further comprises the step of rebinning the first rebinned projection data set from the second geometry to a third geometry, resulting in a second rebinned projection data set. The second rebinned projection data set comprises a third focus data set, wherein a third radial resolution of the third focus data set is higher than the first radial resolution of the projection data set and the first geometry.

Application No. 10/598,866  
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Please replace paragraph 4 on page 3 with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 4~~, the first geometry is one of a fan-beam geometry and a cone-beam geometry and the second geometry is a parallel-beam geometry. Furthermore, the third geometry is one of a fan-beam geometry and a cone-beam geometry.

Please replace paragraph 2 on page 4 with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claims 5 and 6~~, the rebinning of the projection data set from the first geometry to the second geometry is performed by a first angular interpolation and the rebinning of the projection data set from the second geometry to the third geometry is performed by a second angular interpolation, wherein the first angular interpolation and the second angular interpolations are performed in a direction of a view-angle with a constant fan-angle.

Please replace paragraph 4 on page 4 with the following amended paragraph:

Furthermore, according to another exemplary embodiment of the present invention ~~as set forth in claim 7~~, the reconstruction of the object of interest is performed by a filtered back-projection algorithm. The data are hereby either back-projected directly, using a voxel dependent magnification or another parallel rebinning is applied followed by a simple back-projection without magnification.

Application No. 10/598,866  
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Please replace paragraph 6 on page 4 with the following amended paragraph:

According to another exemplary embodiment of the present invention ~~as set forth in claim 8~~, the source of electro-magnetic radiation is a polychromatic x-ray source, wherein the source moves along a helical path around the object of interest and wherein the beam has one of a fan-beam geometry and a cone-beam geometry.

Please replace paragraph 2 on page 5 with the following amended paragraph:

Other exemplary embodiments of the present invention ~~as set forth in claims 9 and 10~~ provide for a data processing device for processing a projection data set of an object of interest by rebinning the projection data set from a first geometry to a second geometry, which may result in an improvement of a radial resolution of the projection data set.

Please replace paragraph 3 on page 5 with the following amended paragraph:

According to other exemplary embodiments of the present invention ~~as set forth in claims 11 and 12~~, a CT scanner system is provided, comprising a memory for storing a data set and a data processor for performing a processing of a projection data set of an object of interest according to an exemplary embodiment of a method according to the present invention.

Application No. 10/598,866

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Please replace paragraph 4 on page 5 with the following amended paragraph:

The present invention also relates to a computer program, which may, for example, be executed on a processor, such as an image processor. Such a computer program may be part of, for example, a CT scanner system. ~~The computer program, according to exemplary embodiments of the present invention, is set forth in claims 13 and 14.~~ The computer program may be preferably loaded into working memories of a data processor. The data processor is thus equipped to carry out exemplary embodiment of the methods of the present invention. The computer program may be written in any suitable programming language, for example, in C++ and may be stored on a computer readable medium, such as a CD-ROM. Also, these computer programs may be available from a network, such as the WorldWideWeb, from which they may be downloaded into image processing units or processors, or any suitable computers.